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EC228 Revised 1933 Farm Slaughter of Hogs

W.J. Loeffel

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Farm Slaughter of Hogs



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Farm Slaughter of Hogs

WM. J. LOEFFEL

Slaughtering hogs and curing the meat on the farm is a common practice which makes available a palatable and nutritious food. It utilizes labor at a season of the year when usually there is no great rush of work.

As a general rule, farm slaughter is not to be recommended until cold weather is a certainty, for warm weather is likely to cause heavy spoilage. Meat is a highly perishable food product, therefore absolute cleanliness should prevail in its handling. Contamination of meat by soiled hands, clothing, tools, or containers is not only insanitary but actually lowers the keeping quality of the meat.

SELECTION OF THE ANIMAL

Above all things, the hog to be slaughtered should be healthy. An animal that is "off feed" should never be used for meat. Thrifty, well-finished pigs weighing 200 to 250 pounds are most satisfactory for farm slaughter, as they can be handled with less effort and produce cuts of more desirable weight. Occasionally a family very desirous for lard is justified in slaughtering a heavy fat sow. Cuts from such a hog being very large, are more likely to spoil in the curing process. Animals should be kept off feed for twenty-four hours prior to slaughter but given plenty of water. This shrinking facilitates bleeding and dressing.

EQUIPMENT

Little equipment is necessary for hog slaughter:

A rack, pole, or tree on which to hang the hogs.

A low table or bench for scraping.

A barrel for scalding.

A light block and tackle or wire stretcher is not essential but saves time.

An abundant supply of clean hot and cold water.

Clean tubs, buckets, cloths.

A short cultivator single tree makes an excellent gambrel.

A good knife (*sharp*).

A steel.

Bell hog scrapers are worth many times their cost.

A meat saw, although a wood saw may be used if necessary.

A dairy thermometer.

A stout hook.

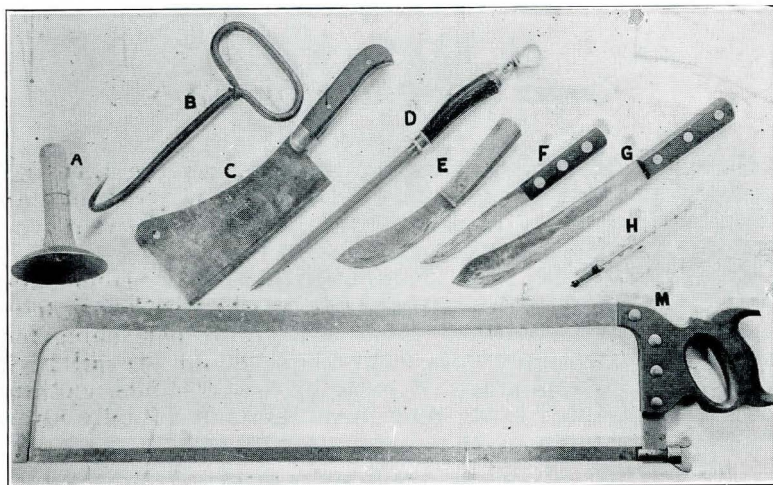


FIG. 1.—Handy slaughtering equipment. A—Bell scraper. B—Hook. C—Cleaver. D—Steel. E—Skinning knife. F—Boning knife. G—Steak knife. H—Dairy thermometer. M—Meat saw.

SLAUGHTERING

Shooting or knocking is unnecessary, dangerous, and often cruel unless the hog is in a large pen, wild or vicious. The hog should be rolled squarely on his back, one man standing astraddle him holding his fore-legs. Bearing down on the point of the chin, the sticker makes a short incision in front of the breast bone. The point of the knife is slipped back under the point of the breast bone, then the cut is made downward, and forward. This severs the forks of the vein and artery which carry blood between the heart and the brain. Care must be taken to keep squarely in the center. It is unnecessary to twist the knife. It is not desirable to stick the heart. If properly stuck, the hog may be released and he will not go far.

If a quick-acting hoist is available the hog may be shackled by one hind leg and hoisted for bleeding. Quicker and more thorough bleeding is thus accomplished.

Sticking on either side of the center results in "shoulder sticks" and heavy loss in trimming. Sticking too far back allows the animal to bleed internally and causes imperfect drainage and slow death.

SCALDING

If the hoist is to be used for scalding, the barrel may be set upright. If the hog is to be scalded by hand, the barrel should be set at an angle against the scraping bench. For

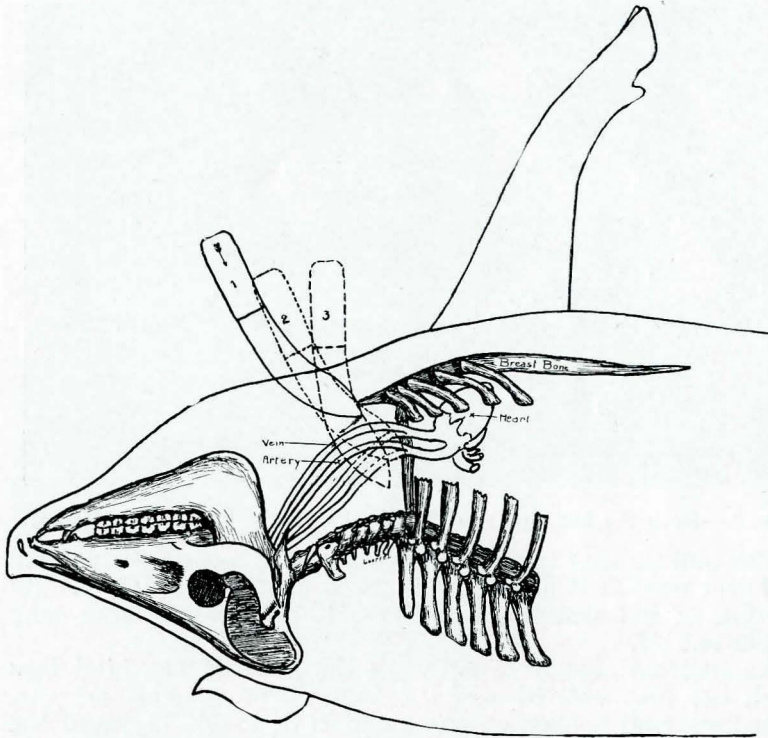


FIG. 2.—The knife slips under the point of the breast bone and splits the forking vein and artery. Follow knife positions, 1, 2, 3.

large kills, a stock tank may be used with a fire underneath or a steam line run into the tank from a boiler.

Before scalding, clotted blood and mud must be removed with cold water as these substances prevent scalding. Slow scalds are best. Temperatures as low as 140° F. will scald beautifully if sufficient time is allowed. Under farm conditions with a cold barrel, cold day, and cold hog, higher temperatures must be used. Temperatures as high as 160° F. may be used with safety if the hog is kept moving in the barrel. A little lye, soap, wood ashes, or lime added to the scalding water aids in cutting the scurf and a cleaner skin results. Too much lye will turn the skin of the hog yellow. The head end of the hog is scalded first while the hind legs are dry. The hog is reversed, the hook placed in the lower jaw, and the rear quarters scalded.



FIG. 3.—Keep the hog square on his back and the knife in the center.

The bell scraper makes short work of scraping. The head and feet need first attention as these parts cool rapidly. By the use of hot water and a sharp knife stray bristles may be shaved off.

An incision should be made in the back of the hind legs from the foot well toward the hock. The tendons are dissected out and hooked on the gambrel or single tree and the hog hung up. The hog is washed with hot water and finally with cold water.

DRESSING

A slight incision is made down the center of the body from between the hams to the point of the jaw. Care should be exercised not to cut through the belly wall into the abdominal cavity.

The knife is placed into the sticking cut, cutting edge up, with the point against the back bone. Using the knife as a pry, the breast bone is split using care to divide the first pair of ribs. Caution must be exercised in splitting the upper portion of the breast bone, for the stomach lies adjacent and is easily cut.

By careful dissection, the abdominal cavity is opened at the top. Taking a firm hold on the knife, the fist is placed within the body cavity. By bearing down, the belly wall is cut through with the heel of the knife, the fist serving to crowd the intestines away from the cutting edge. The cut should be continued downward through the diaphragm.



FIG. 4.—Scald the head end first while the hind legs are dry.

As quickly as the belly wall is cut through, the intestines fall forward and downward, but this need cause no alarm. By cutting squarely between the two hams the pelvic or aitch bone is split. With old hogs, a saw is sometimes necessary, although with young pigs, a knife may be used.

By standing on a box or bench, it is quite easy to loosen the "bung gut". With the knife, the attachments holding the intestines to the back bone are carefully severed allowing the intestines to fall forward. The leaf fat and the kidneys should be left in the carcass. A firm hold should be taken of the viscera with the left

hand to prevent the intestines tearing loose. The paunch or stomach will be found on the left side. This is rolled out. The liver lies on the right side. After its attachments are cut, the liver is rolled forward and supported with the left hand along with the intestines. The diaphragm is now exposed. This sheet of tissue divides the body cavity from the chest cavity. The diaphragm should be cut through where the white tissue joins the red "skirt" muscle. With a little knife work the lungs and heart are loosened, pulling down with them the gullet and windpipe. A cross cut at the throat severs these organs and permits the viscera to come free.

CARE OF THE VISCERA

The viscera should be placed on a clean table and the liver removed. The gall bladder should be carefully dissected out

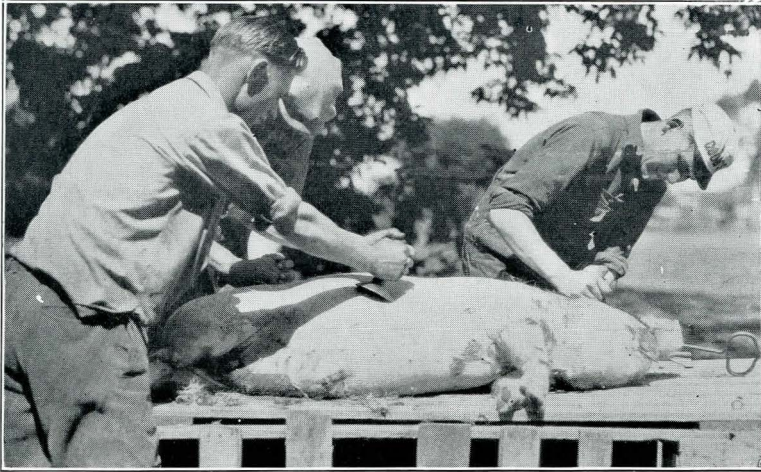


FIG. 5.—The bell scraper scrapes and cleans.

and the liver washed in cold water and hung up to drain. The heart is removed and washed and the lungs discarded. The caul fat or "web" will be found around the stomach. Attached to it is the spleen or melt. Spleens are considered delicacies by some, but generally are discarded. The caul fat is removed and, if clean, may be used for lard, but usually it is used for soap grease.

There is generally enough fat on the intestines to justify "running" them even though they are not to be used for casings. Intestines must be run while they are warm. One should begin at the stomach where the small intestine begins. Following the small intestine carefully until it passes through the "loop" of intestine, the balance is easy. By working over the edge of a table there is little danger of smearing the fat should an intestine break. The left thumb and fingers are placed along the mesentery or fatty tissues which hold the intestines in loops. By pulling the intestines with the right hand the casings are torn loose from their fatty tissues. Unless the large intestine is wanted for casings, it does not pay to run it. On reaching the end of the small intestines, the gut fat is torn loose and used for soap grease.

If the intestines are to be used for casings, great care must be exercised to keep the containers and the intestines absolutely clean. After they have been "run", the contents must be stripped out. The casings are reversed by turning up a



FIG. 6.—Splitting the breast bone first permits the blood to drain out.

fold like a cuff on a pair of trousers. Tepid water is poured into this cuff and the casings "fed in". The weight of the water will turn the intestines wrong side out. The slime or mucous coat which is now on the outside must be scraped off with a sharpened stick, an old tablespoon, or a dull knife. Casings must be "slimed" several times until perfectly clean. Cleaned casings may be packed in salt and kept in a cool place until needed.

CARE OF THE CARCASS

Thorough chilling is essential for the proper preservation of meat. Animal heat must be removed completely and rapidly. The carcass should be prepared for rapid chilling.

The removal of the head greatly aids the circulation of the cold air through the carcass. Beginning at the poll, a cut is made to the back bone unjointing at the first joint or "puzzle bone". By pulling down on the ear the cut is kept open. The cut is carried around the ears to the eyes and then to the

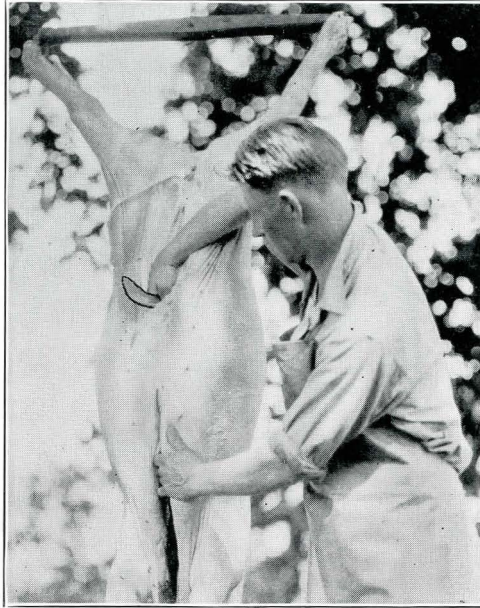


FIG. 7.—Safety for fingers and intestines.

point of the jaw, leaving the jowls or cheeks on the carcass. After the tongue is removed from the head, the head is washed in cold water and hung up to drain.

The carcass should be split to facilitate chilling. While an expert may use a cleaver or ax, the saw is safer for the beginner. Some prefer to split the hog on both sides of the backbone to produce "back bone", but splitting in the center is preferable from the standpoint of cutting up the carcass into useful cuts. With an ordinary gambrel, a foot of skin must be left at the shoulder to keep the carcass from "flipping off". To further hasten chilling, the leaf lard should be "fisted" out with the half-clenched fist. Care must be taken not to tear the muscles of the bacon. If possible, the leaf should be entirely removed, but, if this is not advisable the leaf may be left hanging by its upper attachment. The leaf may be removed more easily and completely while the hog is warm, and the removal hastens chilling.



FIG. 8.—Fasting before slaughter makes this step easy.

Hams spoil at the hip joint. Anything which accelerates the chilling of the ham reduces the chance of spoilage. The ham may be faced more neatly while the hog is warm, which hastens chilling. This also permits the cure to penetrate the meat more readily.

The carcass should be chilled for twenty-four to forty-eight hours before it is cut up. It is impossible to trim warm cuts to attractive appearance and the likelihood of spoilage is greater if the animal heat is not allowed to pass off. The



FIG. 9.—Removing the head hastens chilling.

temperature should be near freezing, yet the meat should not be allowed to freeze since freezing spoils the texture of the meat. Meat which has been frozen can be cured only with difficulty.

CUTTING PORK

There are many methods followed in cutting up hog carcasses. There is no one best way. The method which most nearly meets the needs of the family should be used. The following method yields the maximum amount of meat for curing and the minimum amount of sausage trimmings and lard. If more of these products is desired the cuts may be trimmed more closely or entire cuts like shoulders and jowls worked up.

The jowl is cut off at the neck crease where it joins the shoulder. The glandular cheek meat may be removed and the jowl squared up. These cuts are known as bacon squares. They may be cured up and used for boiling with vegetables, but are too fat to fry. Jowls are frequently used for sausage and lard, especially if the shoulders are used for that purpose.



FIG. 10.—Center splitting means less waste and more attractive cuts.

The shoulder is cut off three ribs wide at right angles to the back. In the shoulder cut is the breast bone, neck bone, and back bone. These should be removed as "spare" as possible without mutilating the piece. The shoulder is then trimmed to an attractive appearance and some of the fat cut off of the top. The shank is sawed off one-third of the distance to the foot.

The long cut shoulder may be cured up by the man who wants the maximum amount of cured meat. Some work the entire shoulder into sausage. A very satisfactory method of handling the shoulders is to short cut them, that is, to cut them in two at the "neck" or smallest part of the shoulder blade. The top portion of the shoulder is skinned out of the fat and known as a shoulder butt or Boston butt. The lower portion of the shoulder is rounded up somewhat and is known as a picnic shoulder. The picnic shoulder may be cured and smoked while the butt is best used fresh or canned.

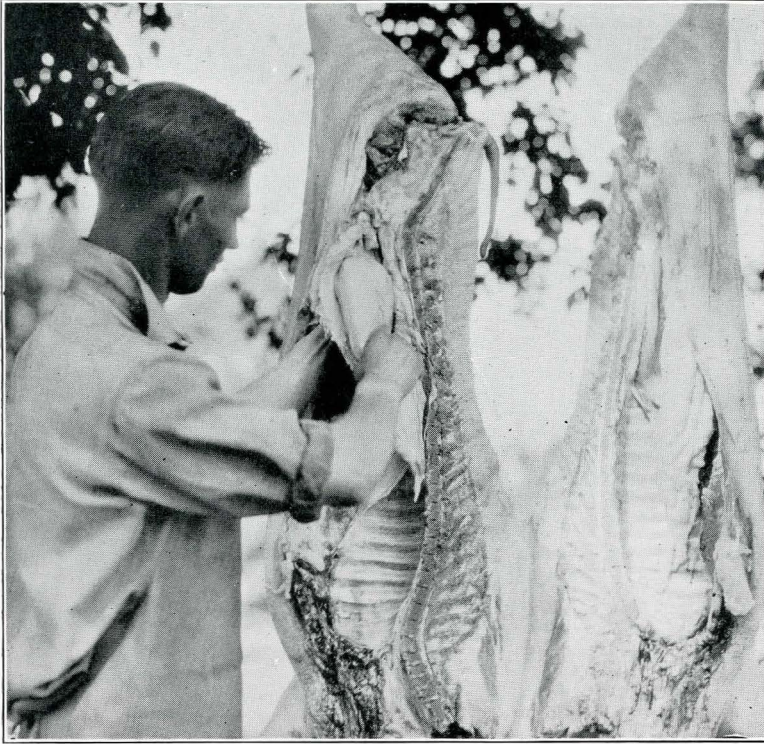


FIG. 11.—It is easy to fist out the leaf while warm.

The ham is taken off at right angles to the hind shank from one to three inches in front of the pelvic or aitch bone. The tail bone is removed and the ham is trimmed to an attractive rounded appearance. The shank is taken off at the hock.

The loin is sawed from the belly at the great curvature of the ribs. With the knife, the cut is completed, taking off the muscular loin from the bacon piece. The loin is placed skin side down and the knife set along the muscle. The knife is drawn through, the piece reversed and the process repeated, separating the loin from the fat back. The loin must be smoothed up so that one-fourth inch of fat is left on it. This cut is used for pork chops, roasts, or may be boned out for canning.

The belly is laid on the table skin side up. By beating with the flat side of a cleaver or hatchet, the ribs are loosened.



FIG. 12.—Facing the ham while warm reduces chances of bone-sour.

The piece is laid skin side down, and the breast bone loosened. Setting the knife at the top of the ribs, it should be carried around permitting the knife to slip out as soon as possible. Care should be taken to keep the knife flat to avoid gouging the bacon. The bacon is turned over and flattened. The lower edge should be trimmed first to a straight line. If the bacon is from a gilt, care should be taken to trim off the udder glands. The top is next trimmed parallel to the under-line. It should be trimmed to a good streak. Both ends should be squared.

All pork cuts intended for curing should be smoothly trimmed. Loose tags should be removed while fresh and used for sausage. If left on the piece, these tags dry out so that they are discarded. Heavy fat shoulders and hams may be skinned, increasing the yield of lard. The skinning should be smoothly done leaving one-fourth of an inch of fat over the cut. Enough skin should be left on the shank to leave a good place to string the piece.

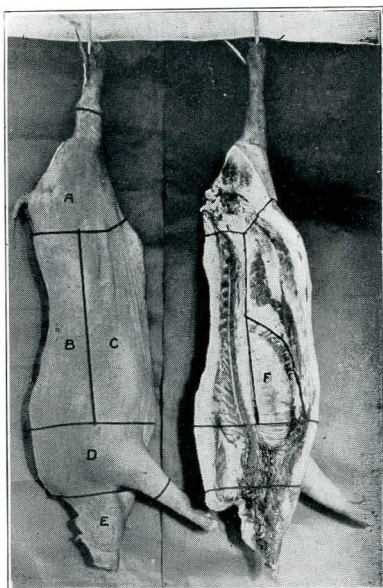


FIG. 13.—The carcass should be thoroughly chilled before cutting.

MEAT CURING

Salt is the principal agent used in meat curing. Not only is it a good preservative, but it also withdraws water from the tissues so that bacteria are less able to break in down. Salt has the objectionable feature of hardening the meat. To counteract the hardening effect of salt, sugar or syrup is frequently added to the better cures, producing sweet pickles or sugar cures. A high grade salt should be used. Either granulated or brown sugar may be used as desired. Salt petre is frequently used in the curing formulae to retain the red color of meat. Pepper is sometimes included in dry cures for flavor. Since pepper is not soluble, it cannot be used in brine cures.

In curing meat, it should be remembered that uniform temperatures are desirable. A temperature of 36° F. or slightly above freezing is preferable. Meat absorbs flavors and taints readily so should be kept in a dry, well-ventilated place.

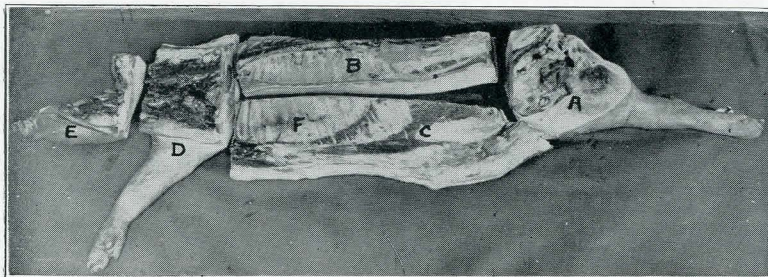


FIG. 14.—Pork cuts untrimmed. A—Ham, B—Loin, C—Bacon, D—Shoulder, E—Jowl, F—Spare rib.

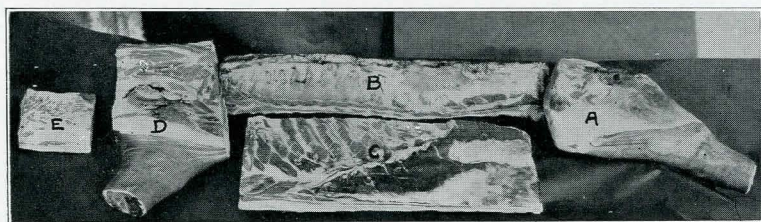


FIG. 15.—Trimmed pork cuts. A—Ham, B—Loin, C—Bacon, D—Shoulder, E—Jowl.

THE DRY CURE

The advantage of the dry cure lies in the fact that it is more rapid than the brine cure. There is no brine to spoil and less equipment is required.

The meat is rubbed thoroughly with the curing mixture taking special pains to cover the lean tissues and also to crowd the cure into the shanks of hams and shoulders. The meat may be piled on a bench or table or packed in a box or barrel. Pieces should be packed to retain their shape.

Within a short time after the meat has been rubbed for the first time the cure will be absorbed and a bloody liquor will run off the meat. Six days after the first rubbing the meat should be rubbed again and "overhauled". The meat should be entirely repacked so that no two pieces remain in contact in the same way too long. Overhauling insures a uniform cure. In seven or eight days the pieces are overhauled again. For best results, the pack should be overhauled three times. Hams should be left in the dry cure two and one-half days and bacons two days per pound-weight of piece. For instance, fourteen-pound hams should be cured thirty-five days.

For those who prefer a sugar cure, one-fourth as much sugar as salt should be added. An excellent curing formula known as the Virginia Dry Cure is made up as follows for 60 pounds of meat:

1 oz. pepper	4 pounds salt
1 oz. salt petre	1 pound sugar

THE BRINE CURE

The brine should be made up a day before it is to be used. If water is heated, approximately two pounds of salt can be dissolved in a gallon of water. This is known as a 100° pickle or a saturated solution. Four or five gallons of pickle are required for every hundred pounds of meat. Should a sweet pickle be desired, one-fourth as much sugar as salt should be added. Add one gallon of water to every four gallons of 100° pickle.

For best results, the brine should be boiled, skimmed, and allowed to cool. Boiling sterilizes the brine. Clean, hard-wood barrels or stone jars make excellent containers for meat curing. Containers should be thoroughly scalded the day before they are needed.

Meat to be brine-cured should be thoroughly rubbed with dry salt, placed in the containers and allowed to stand over night. The salt will draw a bloody fluid from the meat which should be drained from the containers. If the meat is not rubbed with dry salt as suggested, the meat juice will dilute the brine to such an extent that spoilage might occur. After pouring off the bloody fluid, the cool brine is poured on and the meat weighted down. Meat should be overhauled in the brine cure similar to the manner suggested for the dry cure.

Brine must be watched carefully. Sometimes without warning, it becomes sour, slimy, or ropy due to bacterial action. At the appearance of this trouble, the meat should be removed from the brine and each piece thoroughly scrubbed. The brine should be boiled, skimmed, and cooled, or, better still, a new brine should be made. The container also must be sterilized. Brine should be tested from time to time to see that it is sufficiently concentrated. It should be "strong" enough to float a fresh egg.

The brine cure requires about twice as long as the dry cure, consequently pieces should be left in the brine three and one-half days for every pound-weight of piece. Fourteen-pound hams must stay in the cure seven weeks.

In curing meat, it is always necessary to overcure the outside of the piece in order to get the cure into the center of the cut. Consequently it is recommended to soak cuts in tepid

water to remove this excess. After soaking, pieces are strung for the smoke house, and hung up to drain.

Many leave all the meat in the cure long enough to cure the heaviest pieces. This means that the lighter cuts are over salted. To make a high class product, the lighter cuts should be removed from the cure at the proper time as indicated by their weight.

Meat cured in the packing house is cured under ideal conditions due to refrigeration. Hence, it is frequently more palatable than country cured meat, being less salty. It is spoken of as "mild cured" and generally cannot be held for long periods of time. Country cured meat is cured under less favorable conditions and is usually stored for a year, hence heavier salting is necessary. The recommendations given above are for country cured meat. Higher quality although more perishable products can be produced by shortening the curing period.

Occasionally a spell of warm weather endangers a quantity of meat which has been in the cure for a short time. As an emergency measure, it is sometimes necessary to bone out the hams and shoulders to hasten the cure. After curing, the boned cuts may be corded up for smoking. Such cuts, however, should be used up as soon as convenient, for mould penetrates the piece and may necessitate heavy trimming.

Meat is smoked primarily for the flavor imparted, although the creosote compounds formed on the meat do have some preservative action. Any tight building or room may be used for a smoke-house. A barrel set on a bank connected with a fire box by means of drain tile or spouting will suffice. The smoke-house should be as tall as possible so that the heat may be dissipated before it strikes the meat.

Pieces to be smoked should be spaced well apart so that no two pieces touch. The meat should be as high above the fire as possible. A piece of wire netting stretched above the fire may prevent some piece of meat from falling into the fire.

Any non-resinous wood may be used for smoking. Wood of the pine family will coat the meat with soot. For this reason very little pine kindling should be used. Hickory shavings or sawdust are ideal, but in their absence, Nebraska farmers must rely upon apple, maple, or corn cobs. Meat should be smoked until it is of good "chestnut" color. A smudge rather than fire is desired, since a hot fire fries out the grease and may crack the pieces.

There is on the market a brand of salt smoked with hickory whereby meat may be cured and smoked at one operation. A liquid smoke preparation is also available which is said to give good results.

KEEPING CURED MEAT

If the smoke-house is absolutely tight, the smoked meat may be left hanging. Perhaps the simplest means of preserving cured meat is to wrap it in muslin carefully turning in the strings. The meat should then be wrapped in several thicknesses of paper, tied up, and hung from a rafter. Muslin should be used first because much of the mold which forms on the piece can be removed with the cloth. Paper, on the other hand, would stick to the meat very tightly.

In using cured meat, the shoulders should be used first for they are most likely to crack open permitting the mould to penetrate into the pieces. Bacon should be used before it is a year old for it turns yellow and becomes strong. Hams are said to improve with age if properly cured. Mould which forms on cured meat need cause no alarm. It may be scrubbed off with warm water.

RENDERING LARD

Lard is rendered to preserve it by driving off the water. If the moisture remained in the lard, the lard might become rancid or sour quickly. Leaf lard is best, being "shortest" and most flaky. Back fat and trimming fats are more oily and less desirable than leaf fat. The most practical plan is to mix all the different kinds of fat and to render them together. If the hog is scalded clean, the lard stock need not be skinned. The lard stock should be cut into pieces of uniform size. Uniformity of size is essential, for small pieces render out before the large ones are cooked through. Thin slices render out more rapidly than cubes. Skinned lard stock may be ground through a sausage mill. The ground lard stock renders more quickly and also yields a higher percentage than lard stock cut into pieces.

A little water or lard placed in the bottom of the kettle will keep the lard from sticking in the early stages of the rendering process. The lard must be stirred continually while rendering. The melted mass will boil vigorously at about the boiling point of water. The temperature increases slowly at first, then more rapidly as the water is more completely driven off. When the cracklings turn brown and float, or when they fry themselves dry when skimmed off, the lard is done and no time should be lost in taking the lard off the fire or to withdraw the fire. The most accurate means of determining when the lard is done is by the thermometer. The fire should be withdrawn when the temperature reaches 245° F. The lard should be ladled off and strained through muslin. The

cracklings may be pressed in a jelly press lined with muslin. A colander and potato masher may be used in the absence of a press.

As much as ten per cent clean beef suet may be rendered with the lard thereby cheapening it and also producing a lard that stands up better during the hot summer weather. Whenever any other substance than pork fat is used the product cannot be sold as lard, but as lard compound.

Lard is inclined to become rancid. By using air-tight and light-proof containers and keeping the lard in a cool place, it is less likely to become rancid.

SAUSAGE MAKING

There are many different kinds of sausage. It is the purpose here to discuss only a few of the similar kinds. Only high-class meat should be used in sausage. Blood clots and gristle should be carefully removed. Sausage should be seasoned to taste. More seasoning can be added if desired although none can be removed if there is too much. Meat and seasoning should be weighed or measured, and not estimated.

Pork Sausage

Pork sausage should contain one-fourth fat. The general run of trimmings usually contains sufficient fat. Two per cent salt or two pounds of salt per hundred pounds of meat gives a mild sausage. This is very little salt and, if sausage is to be kept for any length of time, the percentage of salt must be increased. The following represents a satisfactory pork sausage:

- 10 pounds sausage trimmings
- 6 tablespoons salt
- 4 teaspoons white pepper
- 2 tablespoons ground sage

If desired, a little red pepper or other spices may be used.

The sausage trimmings should be cut up into uniform size and the seasoning sprinkled over one-half the trimmings. The balance of the meat is now added and the meat worked back and forth several times to thoroughly mix the spices with the meat. The meat is then ground. By seasoning before grinding a more uniform product is obtained. Pork sausage may be kept in bulk or cased. For the latter, a sausage stuffer is needed. The small intestine of the hog is usually used for casing pork sausage. It may be given a light smoke.

Muslin casings, made from a strip of muslin eight inches wide and sewed up the side, may be stuffed with a spoon.

One inch slices make patties of proper size. It is better to can pork sausage or to fry it down than to make it excessively salty for long keeping.

Head Cheese

Cleaned heads, feet, hearts, and tongues are cooked until the meat may be separated from the bones. The bones are carefully picked out. The cooked meat is seasoned as for pork sausage except no sage is used. Season to taste. Add some of the gravy in which the meat was cooked and put into moulds to cool. Head cheese may be stuffed into hog paunches, sewed shut, and cooked in the gravy to cook out some of the fat.

Liver Sausage

One-fourth cooked liver is added to head cheese stock and seasoned to taste as suggested for head cheese. Cloves are the predominating spice. The mixture should be ground several times, some of the gravy stock added, and the mixture stuffed in pork or beef casings. The liver sausage may be smoked if desired.

Scrapple

The grease may be skimmed off the gravy remaining from the cooking of the meat. Corn meal and a little flour may be stirred into the boiling gravy and cooked as for corn mush. It is turned into moulds and when cool sliced and fried.

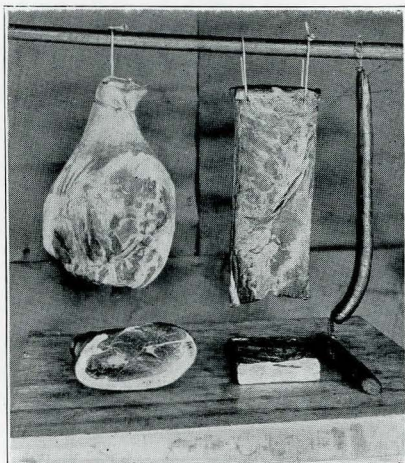


FIG. 16.

"Some hae meat and canna eat,
And some wad eat that want it,
But we hae meat and we can eat,
Sae let the Lord be thankit."

—*Burns.*

Distributed in furtherance of cooperative agricultural extension work. Acts of May 8, 1914, and June 30, 1914. Extension Service of The University of Nebraska Agricultural College and U. S. Department of Agriculture cooperating. W. H. Brokaw, Director of Agricultural Extension Service.

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